



SAN DIEGO CITY SCHOOLS

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NEWS RELEASE

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COLLABORATION SEEKS TO REDUCE ILLEGAL BUSHMEAT TRADE THROUGH USE OF DNA BARCODES

High Tech High students partner with San Diego Zoo, with support from Invitrogen Corporation and San Diego School-to-Career

SAN DIEGO - Students at High Tech High, in collaboration with San Diego Zoo and with support from Invitrogen Corporation and San Diego School-to-Career, have successfully begun an innovative study of forensic conservation biology. The focus of the project is the identification of African bushmeat through a barcode-like process using DNA analysis.

Bushmeat, a term used to refer to food obtained through the hunting of wild animal species, has become a serious area of concern for conservationists in the last 5 years. The illegal trade of bushmeat obtained from endangered animal species is considered to be seriously affecting the populations of these animals. Unfortunately, processed meat obtained from these sources can be difficult to identify with accuracy.

High Tech High students, working with Oliver Ryder Ph.D., director of genetics for the San Diego Zoo's department of Conservation and Research for Endangered Species (CRES), and Jay Vavra Ph.D., biotechnology teacher at High Tech High, hoped to use DNA from dried meat samples to identify the animal of origin. Vavra's biotechnology students (grades 9-12) successfully extracted, isolated, amplified and sequenced DNA from samples of ostrich, beef and turkey jerky (used to simulate bushmeat samples). In collaboration with CRES genetics researchers, the students from High Tech High were able to partially or completely sequence the gene Cytochrome Oxidase I from each dried meat sample. They then were then able to correctly align the sequences generated with existing genetic databases to determine the species of origin.

It is hoped that this new innovation will be incorporated into efforts to stop illegal bushmeat trafficking undertaken through the Consortium for the Barcode of Life. The consortium is an international collective effort focused on DNA barcoding for taxonomic identification of plant and animal species. The application of DNA barcoding to the African bushmeat crisis may facilitate more rapid and effective identification of threatened and endangered species that are being decimated for the bushmeat trade. Specifically, this will provide methods for
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monitoring trafficking in bushmeat products.

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About High Tech High

High Tech High (HTH) is a public charter high school located in the former Naval Training Center in San Diego. Applicants are accepted by a zip-code lottery system insuring a student demographic profile comparable to the City of San Diego. To date, all HTH students go onto college, with 80 percent enrolling directly in four-year institutions. With 100 % college placement overall and a track record of success as judged by California state accountability measures (particularly among Latino and socio-economically disadvantaged students), HTH has demonstrated that its innovative educational approach is working. A recent article in *Forbes* magazine titled, "Where Everyone Can Overachieve," described HTH as "doing wonders with disaffected high schoolers in San Diego, the first step in a grand plan to reverse America's failure at mass education."

About the San Diego Zoo

The 100-acre San Diego Zoo is operated by the not-for-profit Zoological Society of San Diego. The Zoological Society, dedicated to the conservation of endangered species and their habitats, engages in conservation and research work around the globe. The Zoological Society also manages the 1,800-acre San Diego Zoo's Wild Animal Park (more than half of which has been set aside as protected native species habitat) and the department of Conservation and Research for Endangered Species (CRES), and is working to establish field stations in five key ecological areas worldwide.

About Invitrogen Corporation

Invitrogen Corporation is a key partner in the global life science community. Their quest is to better the human condition through innovations in science and technology. Invitrogen provides products and services that support academic and government research institutions as well as pharmaceutical and biotechnology companies. As an industry leader, Invitrogen recognizes the importance of science education and exploration at all levels. By supporting High Tech High, Invitrogen is directly inspiring today's students and shaping tomorrow's scientists.

About San Diego School-to-Career

The mission of School-to-Career is to provide the students of San Diego City Schools with the skills and abilities to make a successful transition from school to a career, whenever that transition might occur. A variety of career/technical courses is available at all comprehensive high schools. These courses are organized into career paths and/or career-themed academies.

About San Diego City Schools

Serving more than 135,000 students, San Diego City Schools (SDCS) is the second largest school district in California, with 200 educational facilities and more than 14,500 full-time equivalent positions (representing more than 18,800 employees). The district is committed to accelerating gains in student performance, supporting schools and enhancing the classroom learning environment through modernized facilities and resources. SDCS also seeks to strengthen parent, community and higher education support of the educational process.